Henry Post

ITMD 455

Lab 5: Quiz

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# MainActivity.java

**package** me.henryfbp.quiz;  
  
**import** android.app.Activity;  
**import** android.app.ProgressDialog;  
**import** android.os.AsyncTask;  
**import** android.os.Bundle;  
**import** android.support.v7.app.AppCompatActivity;  
**import** android.view.View;  
**import** android.view.View.OnClickListener;  
**import** android.widget.Button;  
**import** android.widget.ImageView;  
**import** android.widget.RadioButton;  
**import** android.widget.RadioGroup;  
**import** android.widget.RatingBar;  
**import** android.widget.TextView;  
**import** android.widget.Toast;  
  
**import** java.io.BufferedReader;  
**import** java.io.InputStream;  
**import** java.io.InputStreamReader;  
**import** java.net.HttpURLConnection;  
**import** java.net.URL;  
**import** java.util.ArrayList;  
**import** java.util.HashMap;  
**import** java.util.Map;  
  
**public class** MainActivity **extends** AppCompatActivity {  
  
 **private static final** String ***DATA\_URI*** = **"http://www.papademas.net:81/sample.txt"**;  
  
 **private static final** HashMap<Integer, Boolean> ***ANSWER\_BANK*** = **new** HashMap<Integer, Boolean>() {{  
 put(0, **true**);  
 put(1, **false**);  
 put(2, **true**);  
 put(3, **false**);  
 put(4, **true**);  
 }};  
  
 **private static final** HashMap<Integer, Boolean> ***USER\_CORRECT\_ANSWERS*** = **new** HashMap<Integer, Boolean>();  
  
  
 **static int** *questionNum* = 0;  
 Activity **context**;  
 TextView **txtView**;  
 ProgressDialog **pd**;  
 ArrayList<String> **stringList** = **new** ArrayList<>();  
 ImageView **imageViewNext**;  
 ImageView **imageViewPrev**;  
 **private** RadioGroup **radioQuestions**;  
 **private** RadioButton **radioButton**;  
  
 **public static** Integer getBooleans(HashMap<Integer, Boolean> h) {  
  
 **int** x = 0;  
  
 **for** (Map.Entry<Integer, Boolean> e : h.entrySet()) {  
 **if** (e.getValue()) {  
 x += 1;  
 }  
 }  
 **return** x;  
 }  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
 **context** = **this**;  
  
 BackgroundTask bt = **new** BackgroundTask();  
 bt.execute(***DATA\_URI***); *//grab url* }*//end onCreate* **public void** startQuiz() {  
 buttonListener();  
 }  
  
 **public void** buttonListener() {  
  
 Button btnDisplay;  
  
 **radioQuestions** = findViewById(R.id.***radioQuestions***);  
 btnDisplay = findViewById(R.id.***btnDisplay***);  
  
 btnDisplay.setOnClickListener(**new** OnClickListener() {  
  
 @Override  
 **public void** onClick(View v) {  
  
 *// get selected radio button from radioGroup* **int** selectedId = **radioQuestions**.getCheckedRadioButtonId();  
  
  
 **if** (selectedId == -1) { *// They haven't selected anything...* Toast.*makeText*(MainActivity.**this**, **"You haven't selected anything!"**, Toast.***LENGTH\_SHORT***).show();  
 **return**;  
 }  
 **try** {  
 *// find the radiobutton by returned id* **radioButton** = findViewById(selectedId);  
  
 *//If answer matches our answer bank* **boolean** correctAnswer = ***ANSWER\_BANK***.get(*questionNum*) == **radioButton**.getText().toString().equalsIgnoreCase(**"true"**);  
  
 *// Record user's answer's correctness* ***USER\_CORRECT\_ANSWERS***.put(*questionNum*, correctAnswer);  
  
 RatingBar r = findViewById(R.id.***ratingBar***);  
  
 Float rating;  
  
 Float correct = Float.*valueOf*(*getBooleans*(***USER\_CORRECT\_ANSWERS***));  
 Float total = (**float**) ***USER\_CORRECT\_ANSWERS***.size();  
 Float numStars = (**float**) r.getNumStars();  
  
  
 TextView textViewRating = findViewById(R.id.***textViewScore2***);  
 textViewRating.setText(String.*format*(**"%.2f/%.2f"**, correct, total));  
  
 **if** (***USER\_CORRECT\_ANSWERS***.size() == 0) {  
 rating = 1f;  
 } **else** {  
 rating = (correct / total) \* numStars;  
 }  
  
 *// Set rating to (correct / attempted).* r.setRating(rating);  
  
 Toast.*makeText*(MainActivity.**this**,  
 correctAnswer ? **"Right!"** : **"Wrong!"**,  
 Toast.***LENGTH\_SHORT***).show();  
  
 } **catch** (NullPointerException e) {  
  
 *// Our answer bank doesn't have this answer.* Toast.*makeText*(MainActivity.**this**, String.*format*(**"We don't have an answer for number %d."**, *questionNum*), Toast.***LENGTH\_LONG***).show();  
 }  
  
 }  
 });  
 imageListener();  
 }*//end buttonListener* **public void** imageListener() {  
  
 **imageViewNext** = findViewById(R.id.***imageViewNext***);  
 **imageViewNext**.setOnClickListener(**new** View.OnClickListener() {  
  
 @Override  
 **public void** onClick(View view) {  
 *// get new question for viewing* **if** (*questionNum* >= **stringList**.size() - 1) {*//reset count to -1 to start first question again  
 questionNum* = -1;  
 }  
  
 **txtView**.setText(**stringList**.get(++*questionNum*));  
  
 *//reset radio button (radioTrue) to default* **radioQuestions**.clearCheck();  
 }  
 });  
  
 **imageViewPrev** = findViewById(R.id.***imageViewPrev***);  
 **imageViewPrev**.setOnClickListener(**new** View.OnClickListener() {  
  
 @Override  
 **public void** onClick(View view) {  
 *// get new question for viewing* **if** (*questionNum* <= 0) {*//reset count to -1 to start first question again  
 questionNum* = **stringList**.size();  
 }  
  
 **txtView**.setText(**stringList**.get(--*questionNum*));  
  
 *//reset radio button (radioTrue) to default* **radioQuestions**.clearCheck();  
 }  
 });  
 }*//end imageListener  
  
 //background process to download the file from internet* **private class** BackgroundTask **extends** AsyncTask<String, Integer, Void> {  
  
 **protected void** onPreExecute() {  
 **super**.onPreExecute();  
 *//display progress dialog* **pd** = **new** ProgressDialog(**context**);  
 **pd**.setTitle(**"Reading the text file"**);  
 **pd**.setMessage(**"Please wait."**);  
 **pd**.setCancelable(**true**);  
 **pd**.setIndeterminate(**false**);  
 **pd**.show();  
  
 }  
  
 **protected** Void doInBackground(String... params) {  
 URL url;  
 String StringBuffer = **null**;  
 **try** {  
 *//create url object to point to the file location on internet* url = **new** URL(params[0]);  
 *//make a request to server* HttpURLConnection con = (HttpURLConnection) url.openConnection();  
 *//get InputStream instance* InputStream is = con.getInputStream();  
 *//create BufferedReader object* BufferedReader br = **new** BufferedReader(**new** InputStreamReader(is));  
  
 *//read content of the file line by line & add it to Stringbuffer* **while** ((StringBuffer = br.readLine()) != **null**) {  
 **stringList**.add(StringBuffer);*//add to Arraylist* }  
  
 br.close();  
  
 } **catch** (Exception e) {  
 e.printStackTrace();  
 *//close dialog if error occurs* **if** (**pd** != **null**) {  
 **pd**.dismiss();  
 }  
 }  
  
 **return null**;  
  
 }  
  
 **protected void** onPostExecute(Void result) {  
 *//close dialog* **if** (**pd** != **null**) {  
 **pd**.dismiss();  
 }  
 **txtView** = findViewById(R.id.***textViewQuestion***);  
 *//display read text in TextView* **txtView**.setText(**stringList**.get(0));  
 startQuiz();  
  
 }  
 }*//end BackgroundTask class*}*//end activity*